

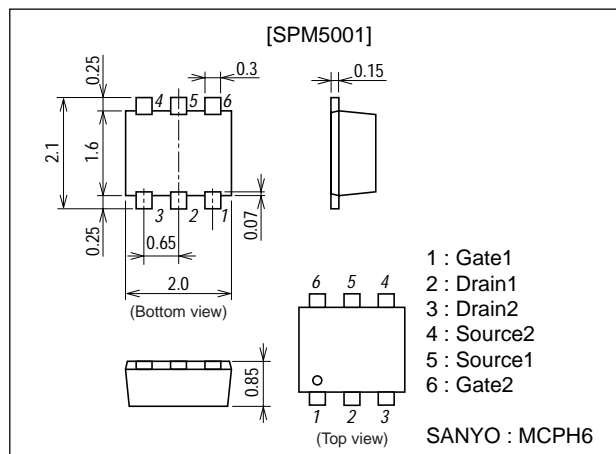
SANYO**RF Double Balanced Mixer****Features**

- Wide band double balanced mixer.
- Low distortion.
- The chip surface is covered with highly reliable protection film.
- Automatic surface mounting is available.
- MCPH6 package.

Package Dimensions

unit : mm

2211

**Specifications****Absolute Maximum Ratings** at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		6	V
Gate-to-Source Voltage	V_{GS}		-4	V
Drain Current	I_D		60	mA
Allowable Power Dissipation	P_D		200	mW
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Source Leakage Current	IG1S1O	$V_{G1S1}=-5\text{V}$			-10	μA
	IG2S1O	$V_{G2S1}=-5\text{V}$			-10	μA
	IG2S2O	$V_{G2S2}=-5\text{V}$			-10	μA
	IG1S2O	$V_{G1S2}=-5\text{V}$			-10	μA
Zero-Gate Voltage Drain Current	ID1S1S	$V_{D1}=3\text{V}, V_{G1S1}=0, V_{G2}=-4\text{V}$	20	40	60	mA
	ID2S1S	$V_{D2}=3\text{V}, V_{G2S1}=0, V_{G1}=-4\text{V}$	20	40	60	mA
	ID1S2S	$V_{D1}=3\text{V}, V_{G2S2}=0, V_{G1}=-4\text{V}$	20	40	60	mA
	ID2S2S	$V_{D2}=3\text{V}, V_{G1S2}=0, V_{G2}=-4\text{V}$	20	40	60	mA

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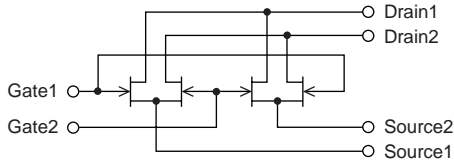
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SPM5001

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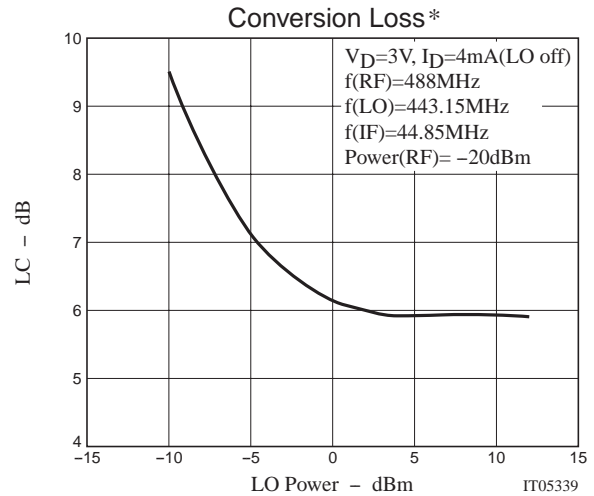
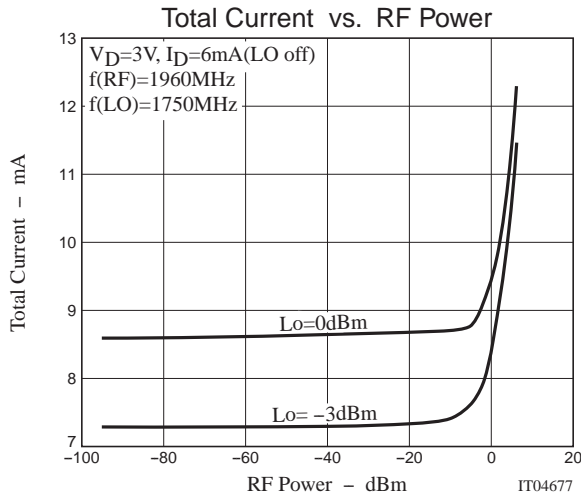
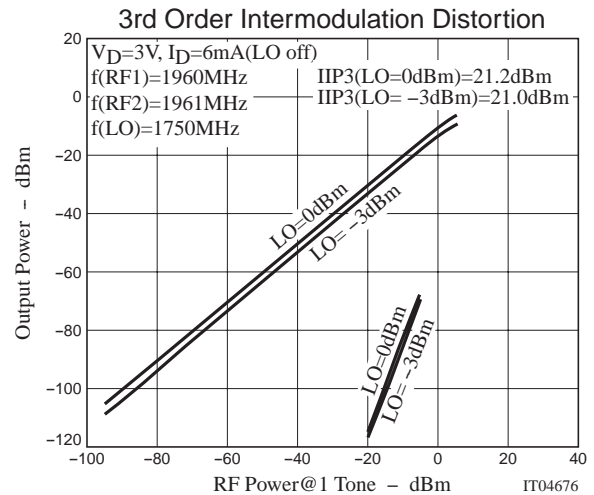
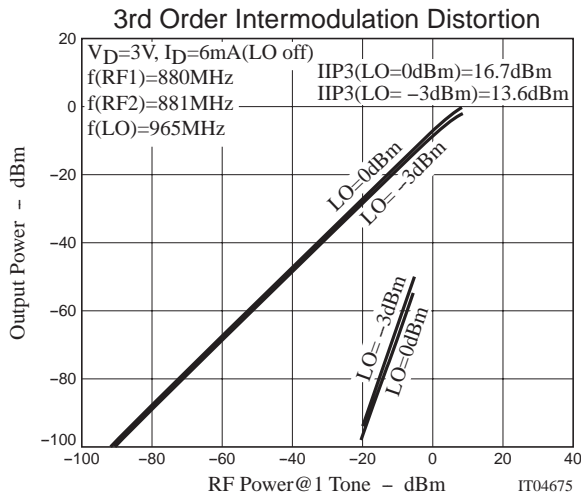
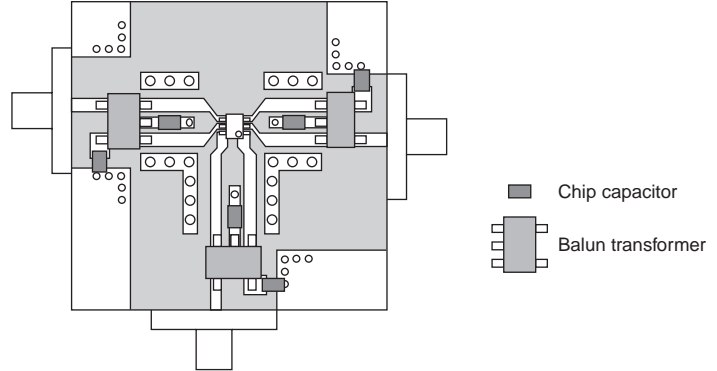
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Source Cutoff Voltage	VG1S1(off)	$V_D=3V, I_D=100\mu A$	-0.5	-1.0	-1.5	V
	VG2S1(off)	$V_D=3V, I_D=100\mu A$	-0.5	-1.0	-1.5	V
	VG2S2(off)	$V_D=3V, I_D=100\mu A$	-0.5	-1.0	-1.5	V
	VG1S2(off)	$V_D=3V, I_D=100\mu A$	-0.5	-1.0	-1.5	V

Equivalent Circuit



[Reference Data]

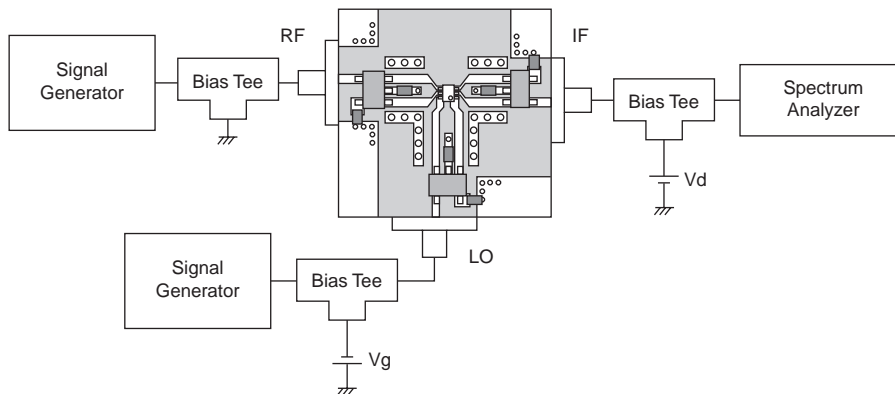
Mixer Characteristics Measured by the Evaluation Board for SPM5001



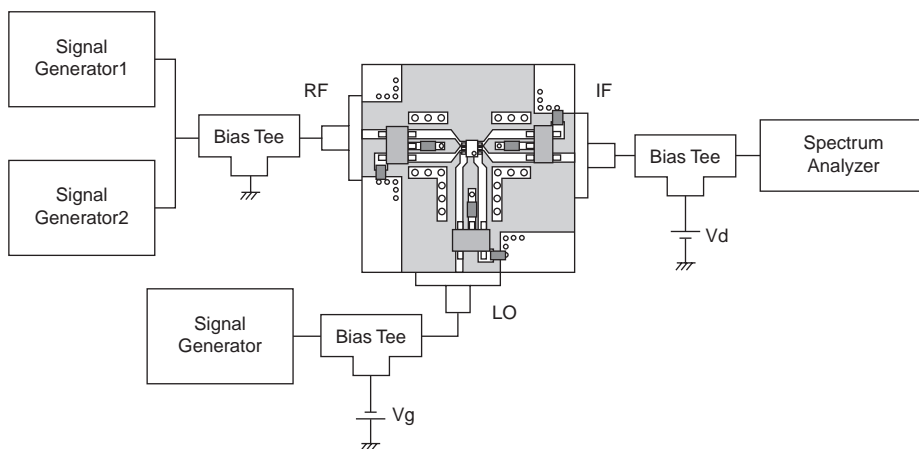
* This Conversion Loss characteristic includes the loss of the test board and the Balun Transformer.

Measurement System

- IF output power vs. RF input power



- IM3, IM2 vs. RF input power



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